WHAT IS CLAIMED IS:

1. A perpendicular magnetic recording head for use with a magnetic recording medium to improve resolution, the magnetic recording medium having a hard magnetic recording layer and a soft magnetic underlayer, the perpendicular magnetic recording head comprising:

a read element having a first side and a second side;

a first magnetic flux generating element spaced apart from the first side of said read element, wherein said first magnetic flux generating element transmits a magnetic flux into the soft magnetic underlayer adjacent an air-bearing surface of the first magnetic flux generating element; and

a second magnetic flux generating element spaced apart from the second side of said read element, wherein said second magnetic flux generating element transmits a magnetic flux into the soft magnetic underlayer adjacent an air-bearing surface of the second magnetic flux generating element.

2. The perpendicular magnetic recording head of claim 1, wherein the first and second magnetic flux generating elements are positioned adjacent an electrically conductive element which induces the magnetic flux in the first and second magnetic flux generating elements.

3. The perpendicular magnetic recording head of claim 1, wherein the magnetic flux transmitted to the soft magnetic underlayer by the first magnetic flux generating element flows in an opposite direction within the soft magnetic underlayer than the flow of the magnetic flux transmitted to the soft magnetic underlayer by the second magnetic flux generating element.

4. The perpendicular magnetic recording head of claim 1, wherein the magnetic flux transmitted to the soft magnetic underlayer by the first magnetic flux generating element flows in the soft magnetic underlayer away from an area of the soft magnetic underlayer beneath the read element.

5. The perpendicular magnetic recording head of claim 1, wherein the magnetic flux transmitted to the soft magnetic underlayer by the second magnetic flux generating

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element flows in the soft magnetic underlayer away from an area of the soft magnetic underlayer beneath the read element.

6. The perpendicular magnetic recording head of claim 1, wherein the first and second magnetic flux generating elements include at least one material selected from the group consisting of Permalloy, FeAlN, Fe/Co and Ni/Fe (45/55.

7. The perpendicular magnetic recording head of claim 1, wherein the first magnetic flux generating element includes an inner magnetic element and an outer magnetic element, said inner magnetic element spaced apart from the first side of said read element and positioned between said read element and said outer magnetic element.

8. The perpendicular magnetic recording head of claim 7, wherein the first magnetic flux generating element further includes a yoke that magnetically connects the inner magnetic element and the outer magnetic element.

9. The perpendicular magnetic recording head of claim 7, wherein the flux transmitted to the soft magnetic underlayer is concentrated in an area of the soft magnetic underlayer beneath the inner and outer magnetic elements and therebetween.

10. The perpendicular magnetic recording head of claim 7, wherein the inner magnetic element and outer magnetic element are positioned adjacent an electrically conductive element which induces the magnetic flux in the inner and outer magnetic elements.

11. The perpendicular magnetic recording head of claim 1, wherein the second magnetic flux generating element includes an inner magnetic element and an outer magnetic element, said inner magnetic element spaced apart from the second side of said read element and positioned between said read element and said outer magnetic element.

12. The perpendicular magnetic recording head of claim 11, wherein the second magnetic flux generating element further includes a yoke that magnetically connects the inner magnetic element and the outer magnetic element.

13. The perpendicular magnetic recording head of claim 11, wherein the flux transmitted to the soft magnetic underlayer is concentrated in an area of the soft magnetic underlayer beneath the inner and outer magnetic elements and therebetween.

14. The perpendicular magnetic recording head of claim 11, wherein the inner magnetic element and outer magnetic element are positioned adjacent an electrically conductive element which induces the magnetic flux in the inner and outer magnetic elements.

15. A perpendicular magnetic recording head, comprising:

a read element; and

means for generating a magnetic flux which improves resolution during operation of said read element.

16. The perpendicular magnetic recording head of claim 15, wherein the means for generating a magnetic flux includes at least one magnetic flux generating element spaced apart from said read element.

17. The perpendicular magnetic recording head of claim 16, wherein the magnetic flux generating element is at least partially circumferentially disposed about said read element.

18. A magnetic disc drive storage system, comprising:

a housing;

a magnetic recording medium having a hard magnetic recording layer and a soft magnetic underlayer; and

a perpendicular magnetic recording head positioned adjacent the magnetic recording medium, the recording head comprising:

a read element having a first side and a second side;

a first magnetic flux generating element spaced apart from the first side of said read element, wherein said first magnetic flux generating element transmits a magnetic flux into the soft magnetic underlayer adjacent an air-bearing surface of the first magnetic flux generating element; and

a second magnetic flux generating element spaced apart from the second side of said read element, wherein said second magnetic flux generating element transmits a magnetic flux into the soft magnetic underlayer adjacent an air-bearing surface of the second magnetic flux generating element, wherein the first and second magnetic flux generating elements improve the resolution of the recording head.

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19. The magnetic disc drive storage system of claim 18, wherein an air-bearing surface of the first and second magnetic flux generating elements is spaced from a boundary layer of the soft magnetic underlayer a distance of from about 5 nm to about 10 nm.

20. The magnetic disc drive storage system of claim 18, wherein the flux transmitted to the soft magnetic underlayer is concentrated in an area of the soft magnetic underlayer beneath the inner and outer magnetic elements and therebetween.

21. The magnetic disc drive storage system of claim 18, wherein the flux transmitted to the soft magnetic underlayer has the effect of curving a boundary layer of the soft magnetic underlayer.

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